REMARKS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

Claims 1-25 are presently active in this case. The present Amendment amends Claims 1-25 without introducing any new matter.

The outstanding Office Action objected to Claim 2 because of informalities. Claim 14 was rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement. Claim 2 was rejected under 35 U.S.C. §112, second paragraph as incomplete. Claims 13 and 15 were rejected under 35 U.S.C. §102(e) as anticipated by Clark et al. (IEEE Publication, ACM Transactions on Networking, Vol. 6, No. 4, August 1998, herein "Clark"). Claims 16 and 18-22 were rejected under 35 U.S.C. §103(a) as unpatentable over Clark. Claim 17 was rejected under 35 U.S.C. §103(a) as unpatentable over Clark in view of Skirmont (U.S. Patent No. 6,252,848). Claims 1, 3 and 23-25 were rejected under 35 U.S.C. §103(a) as unpatentable over Applicant's alleged admitted prior art (herein "APA") in view of Clark.

Claims 6-12 were indicated as allowable if rewritten to overcome the rejection under 35 U.S.C. §112, second paragraph, and if rewritten in independent form. Claims 4-5 and 19-22 were indicated as allowable if rewritten in independent form. Applicant acknowledges with appreciation the indication of allowable subject matter.

However, since Applicant considers that independent Claims 1, 2 and 13, from which Claims 4-12 and 19-22 depend upon, include allowable subject matter, Claims 4-12 and 19-22 are kept in dependent form at present time.

In order to better comply with U.S. claim drafting practice, Claims 1-25 are amended. Since the changes are merely formal in nature, they are not believed to raise a question of new matter.

In response to the objection to Claim 2 and the rejection of Claim 2 under 35 U.S.C. §112, second paragraph, Claim 2 is amended to spell out the abbreviations of the terms RIO, ltRIO, and WRED and the term "the same value" is amended to recite "a same value." Furthermore, Claim 2 is amended for clarification of the steps of the method. In particular, Claim 2 is amended to recite that the RIO, ltRIO and WRED are used to calculate drop probabilities. These features finds non-limiting support in specification as originally filed, for example at page 12, lines 24-28, page 15, lines 17-22, and from page 15, line 28 to page 16, line 8.

In response to the rejection of Claim 14 under 35 U.S.C. §112, first paragraph, Applicant respectfully submits that the claim does not contain subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains to make and/or use the invention. Applicant's specification at page 11, lines 4-11 explains that "the main objective of [active queue management] AQM mechanisms is to reduce the average queue length in routers ... an advantage with AQM is that one single FIFO queue can be used for all traffic belonging to these flows." A FIFO queue is a queue using priority queuing, as explained in U.S. Patent No. 6,633,575 at column 7, lines 25-41 and in corresponding Figure 4. The method as claimed in Claim 13 is concerned with differentiation between traffic originating from rate adaptive applications that respond to packet loss, thereby dropping packets in accordance with their assigned drop probability. One skilled in the art would readily recognize that the dropping of packets, in accordance with Applicant's invention, is compatible with packets being queued in a FIFO queue. Merely because some packets of the queue are dropped based on a calculated probability of dropping, the first-in-first-out principle of a FIFO queue can still be applied.

Accordingly, Applicant respectfully traverses the rejection of Claim 14 under 35 U.S.C. §112, first paragraph, and requests reconsideration of the rejection, since Applicant's

specification provides a written description to enable one skilled in the art to which it pertains to make and/or use the invention.

In response to the rejection of Claims 13 and 15 under 35 U.S.C. §102(e), Applicant respectfully requests reconsideration of this rejection and traverses the rejection, as discussed next.

Briefly recapitulating, Applicant's invention, as recited in Claim 13, relates to a method of active queue management for handling prioritized traffic in a packet transmission system, *configured to provide differentiation between traffic originating from rate adaptive applications that respond to packet loss*, wherein traffic is assigned to a drop precedent level, namely in-profile and out-profile. The method includes, *inter alia*, the steps of: calculating an average queue length avg_ql; assigning minimum thresholds min_th_in and min_th_out, for in-profile packets and out-profile packets respectively, and a maximum threshold max_th; retaining all packets with their *initially assigned drop precedent levels* while the average queue length is less than, or equal to, a threshold th_in; assigning a drop probability to each packet, determined from the average queue length avg_ql; retaining all packets while avg_ql is less than th_in; and dropping packets in accordance with their assigned drop probability.

As explained in Applicant's specification at page 4, lines 25-27, Applicant's invention improves upon conventional methods of active queue management, since it provides a queuing mechanism creating multiple levels of drop precedence which can prevent starvation of low prioritized traffic.

Turning now to the applied reference, Clark discloses a method of providing best-effort services to deliver data packets, in times of network congestion.[1] Clark further described that a random early drop (RED) algorithm is used with in/out bit (RIO), to tolerate

[1] See Clark in the Abstract.

transient congestion of the queue of a gateway.[2] However, Clark fails to teach or suggest *retaining all packets with their initially assigned drop precedent levels* while the average queue length is less than or equal to a threshold, as recited in Applicant's Claim 13. On the contrary, Clark explicitly teaches that the RIO gateway performs packet dropping in congestion avoidance phase and in congestion control phase.[3] Clark also states that the RIO gateway drops *out* packets much earlier that it drops *in* packets.[4] Accordingly, a gateway that goes into congestion control phase on still drops packets, as taught by Clark, ***is not*** the retaining of all packets with their initially assigned drop precedent levels while the average queue length is less than or equal to a threshold. Nowhere in Clark is stated that all the packets are retained based on their initially assigned drop precedent levels. Clark is merely able to classify packets as *in* packets or *out* packets at arrival at its RIO gateway, but does not teach or suggest the use of drop precedent levels for retaining packets.[5]

Therefore, Clark fails to teach or suggest every feature recited in Applicant's claims, so that Claims 13 and 15 are believed to be patentably distinct over this reference. Accordingly, Applicant respectfully traverses, and requests reconsideration of, the rejection based on Clark.[6]

In response to the rejection of Claims 16 and 18-22 under 35 U.S.C. §103(a), Applicant respectfully requests reconsideration of this rejection and traverses the rejection, since Clark does not teach or suggest the retaining of all packets with their initially assigned drop precedent levels while the average queue length is less than or equal to a threshold, as discussed above. Clark is silent on the use of the drop precedent levels, since Clark's method

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[2] See Clark at page 13, lines 22-26.
[3] See Clark at page 15, lines 17-22.
[4] See Clark at page 15, lines 19-20 and in Figure 3.
[5] See Clark at page 15, lines 7-9.
[6] See MPEP 2131: "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference," (Citations omitted) (emphasis added). See also MPEP 2143.03: "All words in a claim must be considered in judging the patentability of that claim against the prior art."

calculates the probability of dropping packets based on the queue length, and the queue length is calculated *upon arrival of packet at the gateway.*[7] Accordingly, in Clark drop precedent levels are not taken into account. Therefore, Clark also fails to teach or suggest the features of Applicant's dependent Claim 16, to recite employing a plurality of drop precedence levels, greater than two, and deriving an average queue length for each drop precedence level. Even if Clark *in arguendo* teaches the drop precedence levels, there is no evidence for a motivation to modify the teachings from these references so as to arrive at Applicant's claimed a plurality of drop precedence levels, and deriving an average queue length for each drop precedence level. The position that these teachings *could* be modified to arrive at the claimed inventions would be insufficient to establish a prima facie case of obviousness.[8]

Furthermore, the outstanding Office Action fails to reject Claims 18-22 on proper grounds. The outstanding Office Action merely reiterates in page 7, lines 1-4 the features of Claim 18 without forming any rejection.

Accordingly, in view of the above comments, Applicant respectfully traverses the rejection of Claims 16 and 18-22 under 35 U.S.C. §103(a), and requests reconsideration of the rejection.

In response to the rejection of Claim 17 under 35 U.S.C. §103(e) over Clark and Skirmont, Applicant respectfully requests reconsideration of the rejection and traverses the rejection, since Skirmont does not remedy the deficiencies of Clark. As discussed above, Clark fails to teach or suggest the features regarding plurality of drop precedence levels, and deriving an average queue length for each drop precedence level. The applied Skirmont also fails to teach or suggest such a feature. The outstanding Office Action forms the §103(a)

[7] See Clark at page 15, lines 7-12.
[8] See MPEP 2143.01 stating that the "fact that references can be combined or modified is not sufficient to establish *prima facie* obviousness"; see also same section stating "[a]lthough a prior art device 'may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so,'" (citation omitted).

rejection by asserting that Skirmont teaches that a common threshold value can be used.[9] However, Skirmont does not use a plurality of drop precedence levels, and therefore Skirmont cannot teach or suggest the setting max_th for each drop precedence level to the same value, as recited in Applicant's dependent Claim 18.

In response to the rejection of Claims 1, 3 and 23-25 under 35 U.S.C. §103(a), Applicant respectfully requests reconsideration of this rejection and traverses the rejection, since the references APA and Clark, used by the outstanding Office Action to form the §103(a) rejection, fail to teach or suggest all the features of Applicant's independent Claim 1, as next discussed.

Neither the alleged APA nor Clark teach or suggest the preventing starvation of low prioritized traffic. Clark explicitly states that "the discrimination of *Out* packets in RIO is created," and also states that "a RIO gateway is more aggressive in dropping out packets."[10] Accordingly, Clark teaches away from Applicant's invention since the low prioritized traffic, the out packets, will starve in method of queue management such as described by Clark. A reference may be said to teach away when a person of ordinary skill in the art, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant." *In re Gurley*, 31 USPQ2d 1130, 1131 (Fed. Cir. 1994). To this end, "disclosures in the references that diverge from and teach away from the invention cannot be disregarded", Phillips Petroleum Company v. U.S. Steel Corp., 9 U.S.P.Q.2d 1461 (Fed. Cir. 1989).

Therefore, even if the combination of the teachings of APA and Clark is assumed to be proper, the combination fails to teach every element of the claimed invention.

[9] See the outstanding Office Action at page 7, lines 8-11 pointing to Skirmont at column 5, lines 44-58.
[10] See Clark at page 15, lines 17-18.

Accordingly, Applicant respectfully traverses, and requests reconsideration of, this rejection based on these references.[11]

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal Allowance. A Notice of Allowance for Claims 1-25 is earnestly solicited.

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[11] See MPEP 2142 stating, as one of the three "basic criteria [that] must be met" in order to establish a *prima facie* case of obviousness, that "the prior art reference (or references when combined) must teach or suggest all the claim limitations," (emphasis added). See also MPEP 2143.03: "All words in a claim must be considered in judging the patentability of that claim against the prior art."